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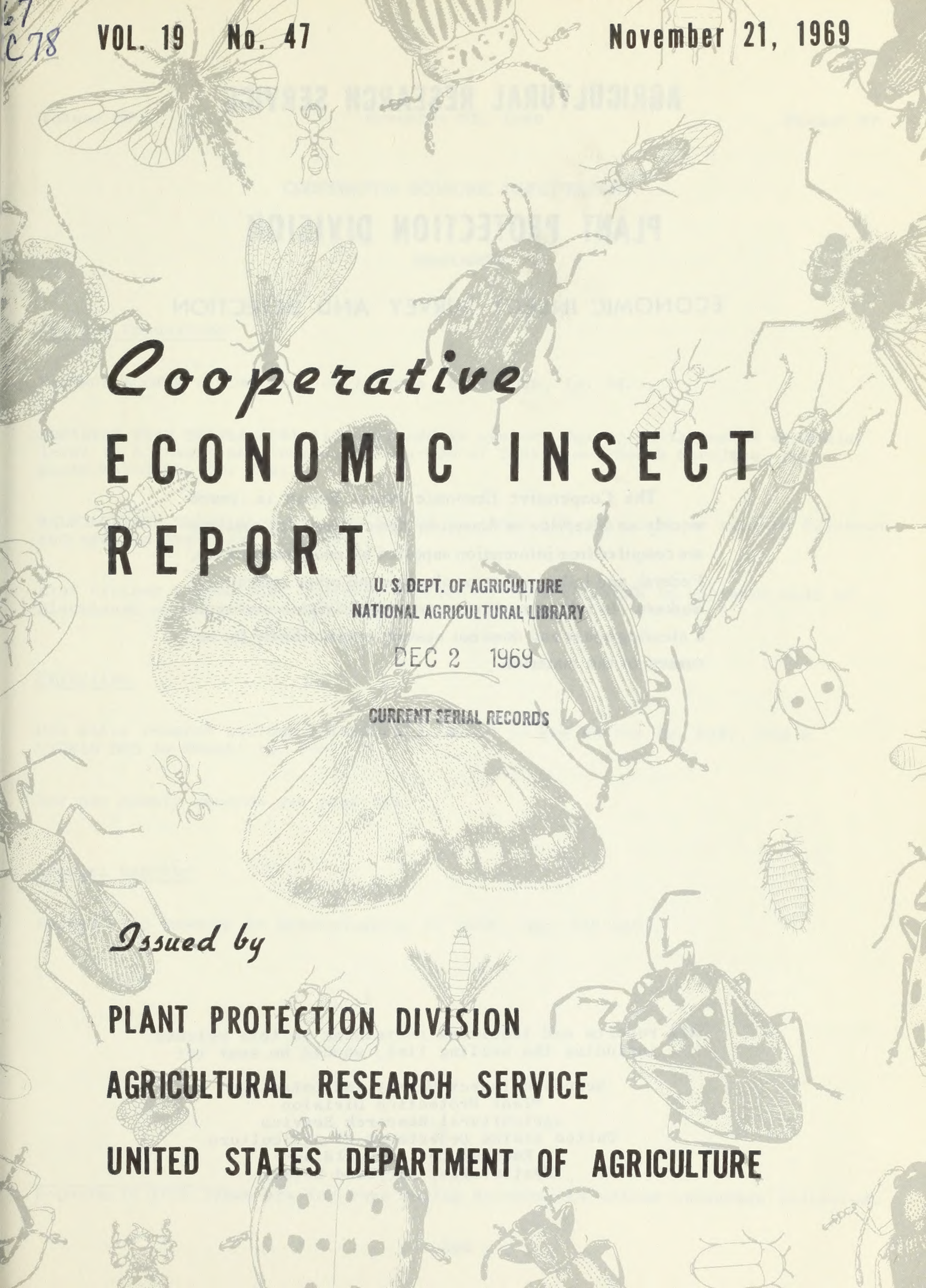

Cooperative
ECONOMIC INSECT REPORT

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ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 19 November 21, 1969 Number 47

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CABBAGE LOOPER troublesome on lettuce in Arizona. (p. 845).

SOUTHERN PINE BEETLE activity declined in eastern Texas; continues at epidemic level in Alabama; and increased in areas of Tennessee, North Carolina, and South Carolina. (p. 846).

WALKINGSTICK defoliated oak and locust on about 100,000 acres in eastern Oklahoma and western Arkansas. (p. 846).

Lint cleaner inspections indicate buildup of PINK BOLLWORM in northern half of Blacklands area of Texas. (p. 847).

Detection

New State records include a LABIDURID EARWIG in New Mexico (p. 846), and a CYDNID BUG in Hawaii (p. 848).

For new county records see page 847.

Special Reports

Forage Crop Insects in Massachusetts in 1969. (pp. 849-850).

Reports in this issue are for week ending November 14 unless otherwise indicated.

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WEATHER BUREAU'S 30-DAY OUTLOOK

MID-NOVEMBER TO MID-DECEMBER

The Weather Bureau's 30-day outlook for mid-November to mid-December is for temperatures to average below seasonal normals over the eastern two-thirds of the Nation except for near to above normal in the Northeast. Above normal temperatures are expected west of the Divide while near normal temperatures are indicated in unspecified areas. Precipitation is expected to exceed normal over the Ohio Valley and the Northeast as well as in California. Subnormal totals are indicated over the northern intermountain region as well as the Mississippi Valley and eastern portions of the Great Plains. Elsewhere near normal precipitation is in prospect.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $5.00 a year.

WEATHER OF THE WEEK ENDING NOVEMBER 17

HIGHLIGHTS: Wintry weather occurred over much of the Nation during at least part of the week. Some warming occurred in the southern Great Plains over the weekend. Heavy snow fell in the lee of the Great Lakes.

PRECIPITATION: High pressure and clear skies prevailed over most of the United States early in the week. The main exceptions included the light snow flurries in the northern Rockies and the more generous showers in New England. Precipitation continued in parts of the Northeast for 13 consecutive days. In some locations, this was the most consecutive days with rain of record. The amounts of rain received threatened to exceed previous November totals at some localities also. About midweek, a blast of wintry weather moved into the northern and central Rocky Mountains. Heavy snow driven by strong winds closed mountain highways in Colorado. Snow squalls occurred in the lee of the Great Lakes over the weekend. Snow accumulated to about 10 inches in the La Porte and South Bend, Indiana, areas, to about 14 inches at Holland and 12 inches at Hancock in Michigan, and 6 to 10 inches in New York near Lake Erie. Niagara Falls, New York, received 6 inches in 1 hour Saturday evening. The central and southern Appalachians saw the first major snowstorm of the season. Up to about 5 inches fell in the mountains of Kentucky, North Carolina, and Virginia and up to 11 inches in West Virginia. Meanwhile, another winter storm moved into the northern Rockies. By Sunday evening 9 inches of snow had accumulated at West Yellowstone, Montana. Except for locally heavier totals, the weekly amounts over the western half of the United States were generally less than 0.5 inch.

Weather of the week continued on page 848.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

CORN LEAF APHID (Rhopalosiphum maidis) - NEW MEXICO - Light on wheat at Tucumcari in Quay County. (Mathews). KANSAS - Light, 0-12 per row foot of wheat in north-central and northeastern areas. Small colonies (2-6 aphids per plant) in whorls of some plants. (Simpson).

GREENBUG (Schizaphis graminum) - NEW MEXICO - Light, 0-3 per row foot, on barley around Roswell, Chaves County. (Mathews). OKLAHOMA - Ranged 50-95 per row foot of wheat at Amber, and 10 per row foot at Tuttle, Grady County, November 6. Currently 4-26 per row foot of wheat and barley in Jackson County, averaged 20 per row foot of wheat in Cotton County, and ranged 0-8 per row foot of wheat in Major County. Decreased considerably in west-central area wheat past 2 weeks. (Okla. Coop. Sur.). KANSAS - Occasionally found in 60 percent of wheatfields in north-central and northeast districts. No colonies. (Simpson).

SPOTTED ALFALFA APHID (Therioaphis maculata) - ARIZONA - Averaged 480 per 100 sweeps in alfalfa field on Yuma Mesa, Yuma County. (Ariz. Coop. Sur.). OKLAHOMA - Light to moderate on most west-central area alfalfa. (Okla. Coop. Sur.).

CORN, SORGHUM, SUGARCANE

CORN ROOTWORMS (Diabrotica spp.) - ALABAMA - Earlier damage by D. undecimpunctata howardi (southern corn rootworm) and/or D. longicornis (northern corn rootworm) now causing noticeable lodging of corn. (Rutledge).

SMALL GRAINS

ENGLISH GRAIN APHID (Macrosiphum avenae) - KANSAS - Alates trace in many wheatfields in north-central and northeastern areas. (Simpson).

FALL ARMYWORM (Spodoptera frugiperda) - OKLAHOMA - Averaged 0.5 larva per row foot of wheat in Jackson County. (Okla. Coop. Sur.).

TURF, PASTURES, RANGELAND

SOUTHERN CHINCH BUG (Blissus insularis) - TEXAS - Widespread and heavy on St. Augustine grass in Harris and Galveston Counties latter part of October. Damage extensive to lawns in cities. (Green).

FORAGE LEGUMES

PEA APHID (Acyrthosiphon pisum) - NEW MEXICO - Generally light on Dona Ana County alfalfa. (N.M. Coop. Rpt.). OKLAHOMA - Light to moderate in many west-central area alfalfa fields. Moderate on Austrian Winter peas in Washita County. (Okla. Coop. Sur.). MISSOURI - Ranged 150-400 per 100 sweeps of southeastern area alfalfa. (Munson).

THREE-CORNERED ALFALFA HOPPER (Spissistilus festinus) - MISSOURI - Ranged 20-270 per 100 sweeps of southeastern area alfalfa. Girdled plants in 4 fields averaged 2.2 percent. (Munson).

SPOTTED CUCUMBER BEETLE (Diabrotica undecimpunctata howardi) - OKLAHOMA - Heavy on alfalfa and Austrian Winter peas in Washita County. (Okla. Coop. Sur.).

GENERAL VEGETABLES

CABBAGE LOOPER (Trichoplusia ni) - ARIZONA - Major problem on lettuce at Yuma, Yuma County. Many larval stages present; required use of insecticides with extended residual. (Ariz. Coop. Sur.).

ONION MAGGOT (Hylemya antiqua) - CALIFORNIA - Larvae medium in onions at Vallejo, Solano County. (Cal. Coop. Rpt.).

A LABIDURID EARWIG (Euborellia cincticollis) - NEW MEXICO - Collected from debris in vegetable garden at Las Cruces, Dona Ana County, by G.L. Nielsen May 5, 1969. Determined by A.B. Gurney. This is a new State record. (Nielsen).

DECIDUOUS FRUITS AND NUTS

AEGERIID MOTHS - FLORIDA - Synanthedon pictipes (lesser peach tree borer) larvae active on unsprayed peach trees at Gainesville, Alachua County. (Fla. Coop. Sur.). TENNESSEE - Sanninoidea exitiosa (peach tree borer) infested 2-10 percent of untreated one-year-old dormant bud peach trees in Warren County. (Warren).

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Larvae light in commercial walnut orchard at Jasper, Lane County. (Hatch, Larson).

APHIDS - CALIFORNIA - Rhopalosiphum nymphaeae (waterlily aphid) nymphs and adults locally heavy on apricot trees at Sacramento, Sacramento County. (Cal. Coop. Sur.). ARIZONA - Hysteroneura setariae (rusty plum aphid) heavy on plum and peach tree foliage and bark in large young orchard at Queen Creek, Maricopa County. Averaged 100 per plum leaf. (Ariz. Coop. Sur.). TENNESSEE - Eriosoma lanigerum (woolly apple aphid) infested 5-10 percent of untreated fruiting and flowering apple trees in Warren County. (Warren).

FOREST AND SHADE TREES

SMALLER EUROPEAN ELM BARK BEETLE (Scolytus multistriatus) - ALABAMA - Dutch elm disease detected for first time in Colbert and Lauderdale Counties. NORTH CAROLINA - Dutch elm disease confirmed for first time in Mecklenburg County. (South. For. Pest Rptr., Oct.).

SOUTHERN PINE BEETLE (Dendroctonus frontalis) - TEXAS - Activity declined in September on private and Federal lands in eastern areas compared to 1968. ALABAMA - Continued at epidemic levels on Bankhead National Forest. TENNESSEE - Increased in Cherokee National Forest. NORTH CAROLINA - Increased in piedmont and mountainous regions. SOUTH CAROLINA - Increased in piedmont and sand hills regions. (South. For. Pest Rptr., Oct.).

ENGRAVER BEETLES (Ips spp.) - ARKANSAS - Single pine trees to small patches located on thin soils or dry slopes dying in early November in west-central area. Spreading from lightning-struck trees to surrounding trees in southeastern area. (Ark. For. Pest Rpt.).

WALKINGSTICK (Diapheromera femorata) - Severely defoliated red oak and locust on about 100,000 acres on Ouachita National Forest in eastern OKLAHOMA and western ARKANSAS. (South. For. Pest Rptr., Oct.).

PINE NEEDLE SCALE (Phenacaspis pinifoliae) - WEST VIRGINIA - Heavy on white pine in Ohio County. (Miller).

OYSTERSHELL SCALE (Lepidosaphes ulmi) - NEW MEXICO - Light to heavy on mountain cottonwoods around Santa Fe, Santa Fe County. (Heninger).

PINE BARK APHID (Pineus strobi) - MARYLAND - Medium on windbreak planting of white pines at New Carrollton, Prince Georges County. (U. Md., Ent. Dept.).

MAN AND ANIMALS

SCREW-WORM (Cochliomyia hominivorax) - No cases reported in U.S. November 9-15. Total of 153 laboratory-confirmed cases reported in portion of Barrier Zone in Republic of Mexico November 2-8 as follows: Baja California 2, Sonora 57, Chihuahua 64, Coahuila 4, Nuevo Leon 4, Tamaulipas 22. Total of 16 cases reported in Mexico south of Barrier Zone. Barrier Zone is area where eradication operation underway to prevent establishment of self-sustaining population in U.S. Sterile screw-worm flies released: Texas 1,208,000; Arizona 1,900,000; Mexico 107,220,000. (Anim. Health Div.).

A MARCH FLY (Dilophus orbatus) - CALIFORNIA - Adults and larvae heavy in lawns at Santa Cruz, Santa Cruz County; Santa Paula, Ventura County; and Sacramento, Sacramento County. Large swarms of adults irritating residents and, in some cases, clogging air conditioner intakes. (Cal. Coop. Rpt.).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - IOWA - Collected in warehouse at Creston, Union County, November 10. This is a new county record. Determined by S.O. Ryan. (Iowa Ins. Sur.). CALIFORNIA - Immature male taken August 28, 1969, in office building at Vandenburg Air Force Base, Santa Barbara County. Identified by W.F. Pippens. Crated metal partitions from out of State suspected of bringing in spider. Additional inspection negative. Second record of spider in State. Not considered established. (Cal. Coop. Rpt.).

HOUSEHOLDS AND STRUCTURES

A DRYWOOD TERMITE (Incisitermes snyderi) - ALABAMA - Collected at Jack, Coffee County, by M. Hornsby July 3. Determined by D.R. Smith. This is a new county record. (McQueen).

STORED PRODUCTS

SAW-TOOTHED GRAIN BEETLE (Oryzaephilus surinamensis) - NORTH DAKOTA - Adults heavy; caused heating in stored oats and wheat at Linton, Emmons County. Controls applied. (McBride).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

BOLL WEEVIL (Anthonomus grandis) - NEW MEXICO - Surveys in 5 southern Dona Ana County cotton fields negative. (N.M. Coop. Rpt.).

PINK BOLLWORM (Pectinophora gossypiella) - CALIFORNIA - Released 564,700 sterile moths November 10-14 in Kern County. (PPD). NEW MEXICO - Larvae heavy in 5 southern Eddy County cotton fields. Infested 56-100 percent of bolls. Adults in hexalure traps decreased sharply in southern Eddy and Dona Ana Counties. Infested 40-52 percent of green bolls in southern Dona Ana County. (N.M. Coop. Rpt.). TEXAS - Lint cleaner inspections indicate buildup in northern half of Blacklands area. (Hare, Nov. 7). One moth in blacklight trap November 8-14 at Waco, McLennan County. (Ent. Res. Div.). OKLAHOMA - Occasional larva collected from late squares and bolls in southwestern and west-central areas. (Okla. Coop. Sur.). TENNESSEE - Lint cleaner inspections in Shelby, Tipton, and Fayette Counties negative. (PPD).

DETECTION

New State Records - A CYDNID BUG (Rhytidoporus indentatus) HAWAII - Hawaii Island. (p. 848). A LABIDURID EARWIG (Euborellia cincticollis) NEW MEXICO - Dona Ana County. (p. 846).

New County Records - A DRYWOOD TERMITE (Incisitermes snyderi) ALABAMA - Coffee (p. 847). BROWN RECLUSE SPIDER (Loxosceles reclusa) IOWA - Union (p. 847).

LIGHT TRAP COLLECTIONS

FLORIDA - Gainesville, 11/7-13, BL - Armyworm (Pseudaletia unipuncta) 2, black cutworm (Agrotis ipsilon) 12, corn earworm (Heliothis zea) 2, fall armyworm (Spodoptera frugiperda) 2, granulate cutworm (Feltia subterranea) 5. MISSISSIPPI - Stoneville, 11/8-14, 2BL, 32-82°F., precip. 1.01 - Armyworm 144, beet armyworm (Spodoptera exigua) 788, black cutworm 57, corn earworm 6, fall armyworm 95, granulate cutworm 11, tobacco budworm (H. virescens) 1, yellow-striped armyworm (Prodenia ornithogalli) 4. TEXAS - Waco, 11/8-14, BL - Armyworm 226, beet armyworm 104, black cutworm 8, cabbage looper (Trichoplusia ni) 3, corn earworm 11, fall armyworm 58, granulate cutworm 72, variegated cutworm (Peridroma saucia) 52, yellow-striped armyworm 4.

HAWAII INSECT REPORT

New State Record - About 40 adults of a CYDNID BUG (Rhytidoporus indentatus) collected in light trap at Hilo, Hawaii, during October 1969. R. indentatus occurs in Florida, Cuba, Haiti, Dominican Republic, Puerto Rico, and St. Croix. Feeds on dung. Determined by R.C. Froeschner. (Buxton).

Turf, Pastures - Adults and larvae of a BILLBUG (Sphenophorus venatus vestitus) medium in Bermuda grass at Waihee golf course, Maui; no noticeable damage. Light in Kikuyu grass pasture at Ulupalakua, Maui. (Ah Sam). RHODES-GRASS SCALE (Antonina graminis) adults light on Bermuda and Kikuyu grasses at Haiku, and in pastures at Waihee, Kula, and Kaupakulua, Maui. (Miyahira).

General Vegetables - BEET ARMYWORM (Spodoptera exigua) medium in 5,000 square feet of green onions; about 30 percent of plants with one or more leaves infested at Waimanalo, Oahu. LEAF MINER FLIES (Liriomyza spp.) light in same planting; in same area, half of green onion leaves damaged in acre planting. Beet armyworm light in same planting. (Funasaki). First instars of CABBAGE WEBWORM (Hellula rogatalis) medium (up to 6 per plant) on young leaves of daikon at Waimanalo. (Kawamura).

Beneficial Insects - A BRACONID (Opius sp., probably melanagromyzae) recovered from backyard snap beans and yardlongbeans at Waialua, Waianae, Ewa, Waipahu, Waimanalo, Kaneohe, and Kahaluu, Oahu. O. melanagromyzae introduced from Africa in April 1969; subsequently released in several areas on Oahu, and on Maui, Kauai, and Hawaii to control Melanagromyza phaseoli (bean fly). (Au, Wong). Adult emergence of a PTEROMALID WASP (Halticoptera patellana) heavy from bean fly pupae collected from backyard snap and yardlongbean plantings at Waimanalo, Ewa, and Kawailoa, Oahu. Eulophid parasites emerging in fewer numbers. (Wong).

Weather of the week continued from page 844.

TEMPERATURE: High pressure, fine weather, and near-normal temperatures extended almost from coast to coast early in the week. Afternoon temperatures reached the 40's and 50's across the North and the 70's and 80's across the South. Considerable fog lay over the Central and East. About midweek, fresh, cool, dry air pushed the fog and pollution from the Central and East and a change in circulation brought dry arctic air into Montana. By Friday, the leading edge of the cold air had reached the Gulf of Mexico and by Saturday morning the temperatures in northern Florida had tumbled into the 20's. The arctic air brought a hard freeze to much of the Deep South. In areas from Alabama to North Carolina, such cold temperatures had never previously occurred so early in the season. Mild weather lingered only along the southern Atlantic seaboard. Saturday was sunny but cold over most of the Nation. Blustery winds sharpened the bite of the cold. Southerly winds warmed the southern Great Plains. Oklahoma City, Oklahoma, warmed to 70° on Saturday; the highest temperature on Friday was 42°. Additional warming occurred in southern Texas on Sunday. Temperatures averaged above normal over the western half of the Nation and below normal over the eastern half. Large areas in the West averaged 4° to 7° warmer than normal. Parts of the East averaged 6° to 9° colder than normal. (Summary supplied by Environmental Data Service, ESSA).

Forage Crop Insects in Massachusetts in 1969

D.E. Miller and F.R. Shaw

Population studies of the insect pests of forage crops, especially alfalfa, were conducted during the 1969 season.

Collections were made at weekly intervals in Hampshire County and biweekly in Berkshire County. The remainder of the counties of the State were sampled only once, at the time high alfalfa weevil (*Hypera postica*) populations were expected to be present. Fields were sampled by taking 100 sweeps with a 15-inch net. The insects were identified in the laboratory. A summary of the population studies is presented in Table 1.

Table 1. Populations of Insects Collected in Alfalfa Fields - 1969

Insect or Insect Groups	Percent of Total Insects Collected			
	Hampshire Co.		Berkshire Co.	
Leaf miner flies (primarily *Agromyza* sp.)	62.8		60.2	
Pea aphid (*Acyrthosiphon pisum*)	21.6		12.7	
Plant bugs	4.5		4.1	
Tarnished plant bug (*Lygus lineolaris*)		2.4		1.6
Alfalfa plant bug (*Adelphocoris lineolatus*)		2.0		0.8
Meadow plant bug (*Leptopterna dolobratus*)		0.1		0.8
Capsus spp.		*		0.2
Trigonotylus ruficornis		*		0.7
Meadow spittlebug (*Philaenus spumarius*)	3.5		1.2	
Alfalfa weevil (*Hypera postica*)	3.3		15.3	
Adults		0.2		0.2
Larvae		3.1		15.1
Leafhoppers	2.3		4.1	
Grasshoppers	0.6		0.6	
Lepidopterous larvae	0.1		0.2	
Sawfly larvae	0.1		*	
Beneficial Arthropods				
Parasitic Hymenoptera	0.5		0.4	
Nabis spp.	0.3		0.3	
Spiders	0.3		0.6	
Coccinellids	0.1		0.2	

*Less than 0.05 percent

Compared with the 1968 collections, some differences in the 1969 insect populations were obvious. Early in 1968, the authors noted a few alfalfa leaves damaged by larvae of a leaf miner fly. By fall, damage had increased. Leaf miner flies became the most abundant insects present in 1969. Pea aphid (*Acyrthosiphon pisum*) was the second most abundant species in Hampshire County, but alfalfa weevil was second in abundance in Berkshire County. The release of more parasitic species in Hampshire County may account for the lower alfalfa weevil population in that county. Plant bugs decreased from 11.9 percent in 1968 to 4.5 percent in Hampshire County and 4.2 percent in Berkshire County. Similarly meadow spittlebug (*Philaenus spumarius*) decreased from 11.48 percent to 3.5 and 1.2 percent in these two counties, respectively. Leafhopper populations were similar both years. Beneficial insects, as a group, were somewhat less abundant in 1969 than in 1968.

Alfalfa weevil larvae were collected in Berkshire, Franklin, Hampshire, and Plymouth Counties from May 13 through June 24 to obtain more information on the percent of parasitism. Third or fourth-instar larvae were vialed singly and held until the adult weevil or the parasites emerged. The data, summarized in Table 2, substantiate the increase in parasitism by _Bathyplectes curculionis_ (an ichneumon wasp) and the decrease in parasitism by _Tetrastichus incertus_ (a eulophid wasp) observed during the period 1965 through 1968.

Table 2. Percent Parasitism by _Bathyplectes curculionis_ and _Tetrastichus incertus_ of the Alfalfa Weevil in Massachusetts, May 13-24, 1969

County	Percent Parasitism		
	Bathyplectes curculionis	_Tetrastichus incertus_	Total
Hampshire	89.59	3.62	93.21
Berkshire	12.31	5.49	17.80
All Counties	50.92	4.13	55.05

Much time was spent investigating the leaf miner flies infesting alfalfa. Infested alfalfa was brought to the laboratory and the larvae reared to adults. They were determined as _Agromyza_ sp. and _Liriomyza_ sp. by K.A. Spencer. The extent of damage to alfalfa by these leaf miners is presented in Table 3.

Table 3. Percent Leaf Miner Damage in Berkshire County on August 14, 1969

Locations of fields	Uninfested Leaflets	Infested Leaflets	Percent Infested
New Marlboro	583	172	22.8
	526	575	52.2
Sheffield	383	365	48.8
	824	252	23.4
Totals	2,316	1,364	36.8*

*Average percent per field.

Two hymenopterous parasites of _Agromyza_ sp. were reared from infested alfalfa leaflets. These were determined by B.D. Burks as _Closterocerus cinctipennis_ Ashmead and _Diglyphus pulchripes_ (Crawford). The significance of these eulophid wasps as control agents has not been determined.

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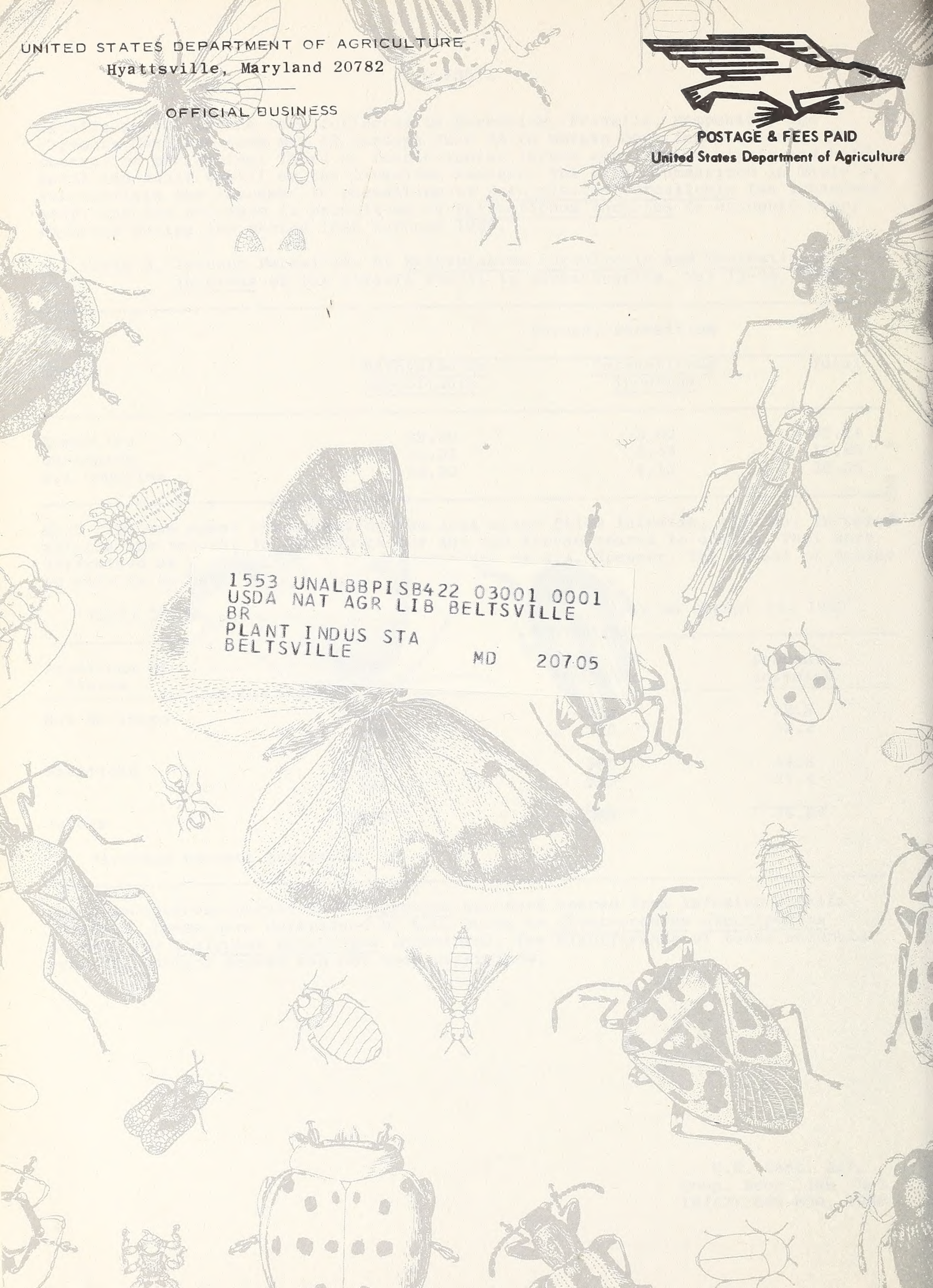

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